Pantex Plant

FY 2008 - 2017

TEN-YEAR SITE PLAN

Approved by:

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The facility and infrastructure plans set by Pantex in this FY 2008 TYSP are consistent with NNSA's goals and objectives. Adequately and consistently funding Pantex required Readiness in Technical Base and Facilities (RTBF) base operations and infrastructure requirements, Line Item (LI) projects, and Facility and Infrastructure Recapitalization Program (FIRP) projects, as identified in this TYSP, will position the site to safely and reliably meet NNSA's goals and expectations:

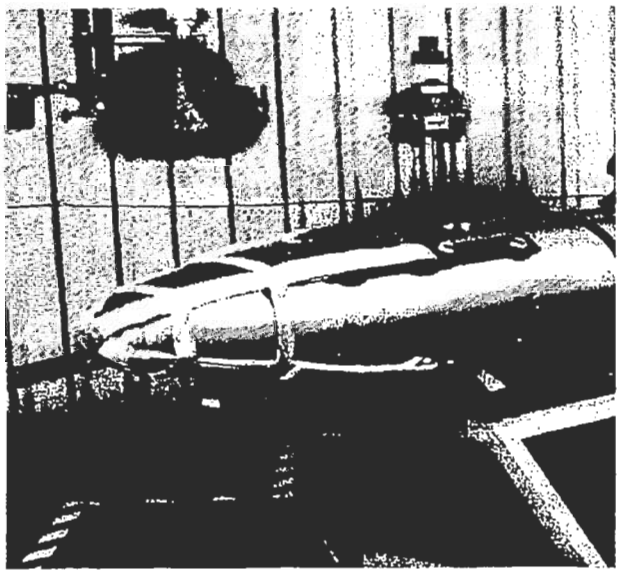
- Exceptional Industrial & Nuclear Safety Performance
- Near-term and long-term Stockpile Stewardship Program mission, e.g., Dismantlements, Life Extension Programs, Surveillance
- Safe and secure management of Special Nuclear Material
- Enhanced project management
- Real property maintenance and overall facility condition goals
- Responsive Infrastructure for long-term mission requirements, e.g., Reliable Replacement Warhead (RRW)
- Establish Pantex as "Center of Excellence" for high explosive development, manufacturing, and testing
- Excellence in environmental and energy management

Based on Pantex's proven performance over the past several years, appropriately and consistently funding Pantex is central to NNSA achieving its objectives. Appropriately funded, Pantex will establish a reliable and responsive infrastructure for the near and long-term NNSA mission and continue to have an unparalleled safety program. A continued and sustained investment in Pantex will secure NNSA's Stockpile Stewardship goals and objectives.

NNSA / BWXT Pantex Notable Accomplishments

Stockpile Stewardship

BWXT Pantex delivered the first production unit for the life extension of the B61-7/11. This is a major milestone, reached on time because of excellent work by the plants, the site offices, and Headquarters. The B61 was first produced in 1966 at the Pantex Plant. Pantex Plant is now charged with weapons maintenance and disassembly. The W76 is an important part of the U.S. nuclear weapons stockpile. Refurbishments will enhance the W76 safety and security, and extend its life an additional 30 years.



At almost the same time, BWXT Pantex completed the disassembly of the last W56 warhead (an old warhead for Minuteman missiles). Designed in an era where disassembly was not given a great deal of thought in design, the W56 posed a number of difficult challenges that were successfully overcome.

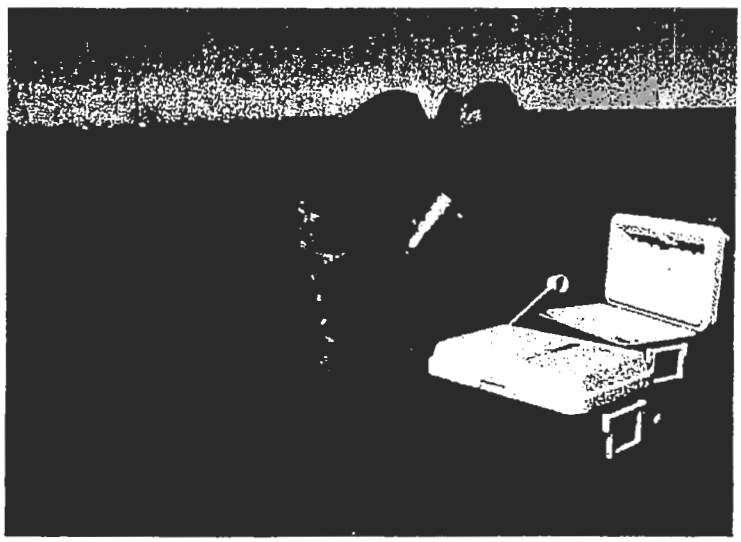
BWXT Pantex is on schedule to deliver W76 LEP FPU. Key to achieving this major milestone is the startup of the Special Nuclear Material (SNM) Component Requalification Facility (SNMCRF) to recertify W76 pits. SNMCRF startup authorization will be received in the 2nd quarter of FY 2007, a significant Plant accomplishment.

Safeguards & Security

Pantex successfully implemented the FY 2003 DBT. Implementation of the FY 2005 DBT has begun and is on schedule with the approved implementation plan. Three infrastructure projects required to support this plan are underway and are on track to meet all milestones.

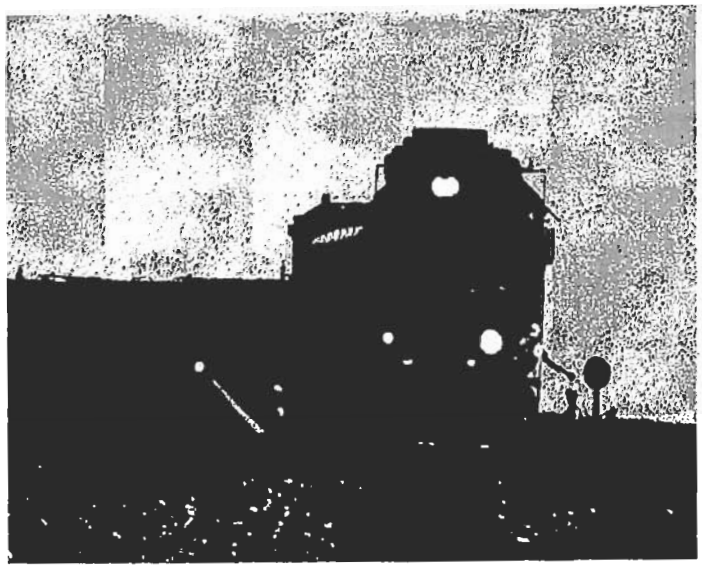
Environmental Management

Pantex's environmental cleanup program is scheduled to transition to Long-Term Stewardship by FY 2009. This is a significant milestone for NNSA. Innovative technologies such as Ozone injection, In Situ Bioremediation and Permeable Reactive Barriers ensure that the use of the Ogallala Aquifer, the primary source of drinking water for this region, will remain a clean and viable natural resource for generations to come.



Environmental monitoring will remain an important part of Long-Term Environmental Stewardship at Pantex.

Deferred Maintenance Reduction



Pantex continues to make progress toward NNSA's goal of reducing deferred maintenance (DM). Pantex eliminated $52 million in DM in FY 2006, of which $38 million was eliminated through the execution of FIRP and RTBF Operations of Facility Plus-up projects. Condition Assessment Survey (CAS) inspections identified assets previously reported as deferred to be in adequate condition and not in need of repair or replacement. The condition of these assets was updated in CAIS thus eliminating $13.5 million from the backlog. Refer to Attachments F-1 through F-5. Some of the key DM bought down in FY 2006 was the removal of the Pantex rail system. Several of the trains used to transport weapons across the rail lines were donated to the Amarillo Railroad Museum and the Atomic Museum in Albuquerque.

In FY 2007, Pantex has allocated approximately $64 million of Operations of Facilities funding toward real property maintenance. This equates to approximately 47% of the total Operations of Facilities budget and approximately 2% of Replacement Plant Value (RPV). This funding level is sufficient to stabilize maintenance and prevent growth in the backlog in FY 2007.

Energy Conservation

Conserving energy is important to Pantex. BWXT Pantex and PXSO initiated aggressive energy management plans to control the rising cost of plant utilities and meet President Bush's September 26, 2005 directive to reduce energy consumption by 10% from the FY 2004 baseline. This aggressive plan exceeded the President's plan and reduced energy consumption at the Plant by 13%. Construction activities associated with the recently awarded $19.5 million Energy

number of weapons, but lead to a safer and more secure stockpile, with weapons that are more easily manufactured and maintained, backed up by a more responsive nuclear weapons infrastructure. The vehicle for this transformation is NNSA's concept for the RRW. RRW is not a new weapon providing new or different military capabilities and/or missions. It will meet the same military requirements as current legacy warheads by utilizing replacement components. It will be able to ensure greater long-term confidence in safety and reliability while decreasing the likelihood that underground nuclear testing would ever be needed to ensure that confidence. Through innovative and enhanced safety and surety features, RRW will also have the capability to prevent unauthorized use.

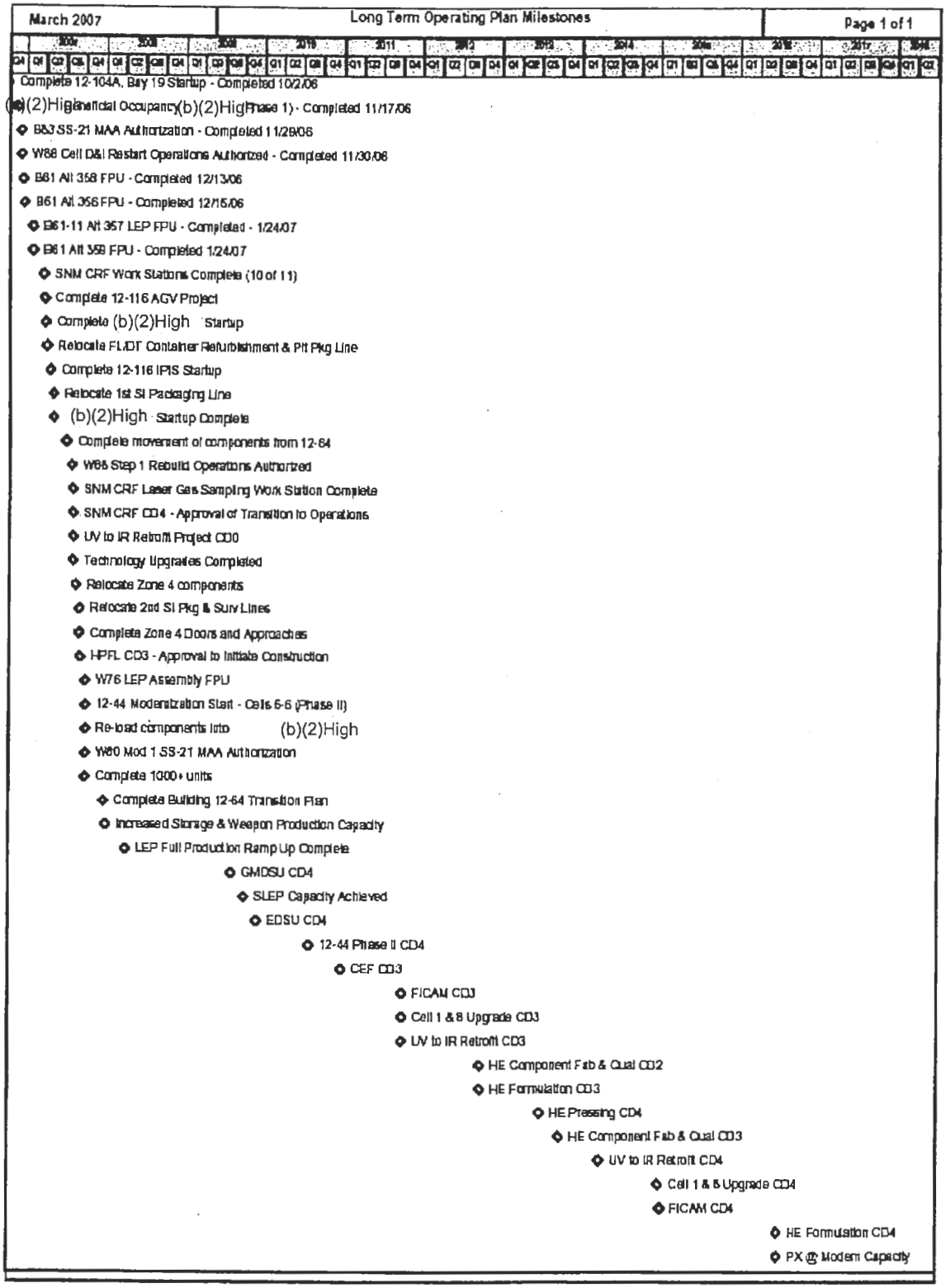
In the meantime, NNSA will continue to maintain and extend the life of the current stockpile through its Life Extension Program. The current stockpile consists of warheads that were developed and nuclear tested during the Cold War to stringent requirements. As weapons are refurbished and their lifespan extended, the inevitable accumulation of small changes that occur results in refurbished weapons that have moved away from their original designs. This raises concerns among scientists about our ability to assure the safety and reliability of the legacy stockpile indefinitely, absent underground nuclear testing.

Through NNSA program planning, an appropriate set of technology upgrades and construction projects has been defined and initiated to deliver the post-FY 2007 LEP capacity requirements. The Building 12-44 Production Cells Upgrade (Phase I and II) and the Special Nuclear Material (SNM) Component Requalification Facility (SNMCRF) Line Item projects are all in process to ensure there is sufficient production capacity and capability to support the post-FY 2008 LEP workload. Additionally, the High Explosive Pressing Facility and the Component Evaluation Facility are being designed to ensure Pantex has the infrastructure necessary to support the high explosive mission and responsive infrastructure to support the RRW initiative. The Long Term Operating Plan shown in Figure ES-1 identifies key project milestones that must be completed at Pantex to upgrade the infrastructure and deploy required technologies and capabilities to meet production requirements safely and securely.

In order to ensure success, BWXT Pantex has developed a long term operating strategy that incorporates the following success factors:

- Maintain exceptional safety posture
- Compliance (e.g., Nuclear Safety, Environmental, 10 CFR 851)
- Deliver weapons per Program Control Document (PCD) schedules
- Satisfy LEP Plan requirements
- Meet Long Term Operating Plan project completion schedules
- Expand Plant storage capacity.
- Establish an High Explosive Center of Excellence

Figure ES-1, Long Term Operating Plan



Strategic Issues

BWXT Pantex and NNSA must achieve and/or address the following key issues to ensure the success of the Stockpile Stewardship mission at Pantex.

- Continue to improve Plant performance to achieve and sustain 1,200 units per year capability in 2008
- Consistently fund DSW commensurate with the directive schedule
- Fund RTBF consistent with increased DSW mission

A critical and near-term concern that NNSA must address is Pantex's RTBF Operations of Facilities FY 2008 and 2009 FYNSP targets. The FY 2008 FYNSP is less than the actual funding received in fiscal year 2003. At the present RTBF Operations of Facilities FY 2008 FYNSP level, $95 million, Pantex will only be able to support approximately 75% of the on-board headcount supporting the Plant's maintenance, facility engineering and industrial/nuclear safety functions. The number of impacted personnel would be approximately 215 FTPs (based on current staffing level), which would significantly affect the site's ability to meet mission goals and impact production abilities in future years. The FY 2009 FYNSP further exacerbates the Plant's ability to meet NNSA maintenance and facility condition goals, and would result in a further reduction of Plant personnel and services. The loss of these resources would further degrade the Plant's infrastructure condition, affect the safety posture, and impact the DSW mission. The requisite RTBF Operations of Facilities funding to support DSW mission is outlined in this 2008 TYSP.

Pantex will achieve 1000 units in FY07 and is on course to achieve 1200 units in FY 2008. With NNSA's commitment to adequately fund both DSW and RTBF, Pantex will be positioned to meet the near and long-term Stockpile Stewardship mission.

1.0 Introduction

This section provides an overview of the content of the Ten Year Site Plan (TYSP) and defines the foundation upon which the site's long-range facilities and infrastructure planning process is built. This section includes assumptions, current situation, and changes from the prior year TYSP.

Long-range facilities and infrastructure planning at Pantex is based on a combination of efforts:

Annual strategic planning session to review changes to NNSA policies and directives, workload drivers, new initiatives, and changes to current long-range plans.

Consultation with programmatic and functional subject matter experts throughout the year to advise of changes in the activities they manage.

Together, these activities and communication paths ensure the basis for the TYSP is current and supports the strategic objectives of NNSA. Refer to Section 4.1 for a complete description of the planning process.

1.1 Overview

The TYSP is prepared by the sites within the Nuclear Weapons Complex (NWC) and is the foundation for strategic planning for the physical complex, incorporating the various programs' technical requirements and budget planning. The Fiscal Year (FY) 2008 plans serve to support the FY 2009 budget submission and are aligned with the NNSA's implementation of the Planning, Programming, Budgeting, and Evaluation System (PPBES) process and site-specific strategic plans. The FY 2008 TYSP also supports the Complex 2030 initiative.

The TYSP process allows an objective assessment of where Pantex is today and where it needs to be in the future to accomplish its mission and the NNSA goals. The content and format of this site plan comply with the following requirements and guidance:

- Department of Energy (DOE) Order 430.1B, *Real Property Asset Management*
- NNSA, FY 2008 – 2017 TYSP Guidance, December 21, 2006
- NNSA Complex 2030, *An Infrastructure Planning Scenario for a Nuclear Weapons Complex Able to Meet the Threats of the 21st Century*

The Pantex Plant TYSP also provides information relative to personnel, technologies, and strategic planning, which facilitates a more complete analysis of the requirements integral to achieving the mission goals of the NNSA.

This TYSP is for FY 2008 through FY 2017; however, certain information is shown over a much longer time period due to the extended weapon production-planning horizon and the planning required for implementation of the Complex 2030 strategic initiatives.

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1.2 Assumptions

This TYSP is based on various assumptions concerning projected budget targets, projected workload, regulatory environment, available facilities, technology, productivity, and the work environment. In some cases, operating basis assumptions are interdependent, and one may affect another.

1.2.1 Budget Assumptions

- Budget data for DSW, Campaigns, and RTBF are based on NA-133 Defense Program Site Splits for FY 2009-2013, adjusted for the 3% HQ reserve. All other NNSA funding, including FIRP, Security, and Material Disposition (MD) are consistent with the FY 2008 Congressional Budget Request published by NA-10 for FY 2007-2012 (February 2007). The budget data are shown in Appendix 1. Variations in funding levels occur in DSW for changes in the workload. LI construction projects funding fluctuations are the reflection of execution phase of projects. DSW has experienced increased operational requirements in Production Support and Dismantlement. These increases have been managed within available funding; however, the impacts can be seen in the requirements for additional facilities and personnel. For FY 2013, targets are based on an escalation factor of 2.3% based on NNSA guidance. Refer to Table 1-1 and Figure 1-1 on the following pages.

- For FY 2008 and beyond, the Safeguards & Security budget request assumes funding levels necessary to support sustainment of the FY 2003 Design Basis Threat (DBT), implementation and sustainment of the FY 2005 DBT, deployment of new technologies, infrastructure upgrades, lifecycle replacement of required equipment/systems and implementation of new security orders.

- Attachment E in the FY 2008 TYSP reflects FIRP disposition funding ending in FY 2009 and any additional disposition activities funded from other sources. Pantex has identified four additional buildings for consideration in the FIRP

D&D program in 2013.

- The ICPP process used by NNSA evaluates and selects Line Item construction projects to satisfy program requirements and funding constraints identified in the Future Year Nuclear Security Program (FYNSP). Attachments A-1 and E-2 are consistent with the ICPP (exceptions footnoted) dated November 7, 2006. Additional candidate RTBF, S&S, DSW, and MD Line Item projects requested for inclusion in the out years of the ICPP are noted in Attachment A-2.

- Responsibility for the Environmental Restoration Program is expected to transition to NNSA in FY 2009. Funding targets in DOE EM's Integrated Planning Accountability and Budgeting System (IPABS) for FY 2009 – FY 2013 are approximately $5 million; however, recent CERCLA and RCRA requirements identified in the Corrective Measure Study/Feasibility Study (CMS/FS) will result in requests to NA-56 for approximately $8 million annually.

- Operations of Facilities programs have been impacted by increased requirements in safety authorization basis and additional funding required to sustain maintenance. Congressional Plus-Up has principally covered Operations of Facilities base program shortfalls and GPP and Expense projects. Pending a FY 2008 Plus-Up or alternative funding strategy, Pantex RTBF Operation of Facilities base program requirements of approximately $123.4 million in FY 2008 are under funded at the $95 million FYNSP level in the President's budget. An additional $21.8 million annually above base is required to maintain an adequate facility condition index. Reference Appendix 3 of this TYSP for further discussion.

Table 1-1, Pantex Ops of Facilities Budget FY 2008-2013

FY 2008 - 2013 Operations of Facilities Budget						
$ In Millions						
	FY 2008	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**
Base Requirement	123.4	131.5	140.5	150.0	160.2	171.2
Projects Requirement	21.8	22.1	22.4	22.8	23.1	23.4
Total Requirement	145.2	153.6	162.9	172.8	183.3	194.6
FYNSP	95.0	99.2	101.5	104.6	106.7	109.3
Difference	(50.2)	(54.4)	(61.4)	(68.2)	(76.7)	(85.2)

Capital Assets, and that apply to baseline development, maintenance, and implementation.

- The Texas Commission on Environmental Quality (TCEQ) and the Environmental Protection Agency (EPA) jointly regulate Environmental Restoration (ER) activities at Pantex, under a memorandum of agreement for activities at federal facilities. Under this memorandum of agreement, EPA is the lead agency for radiological legacy release issues under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and TCEQ is the lead agency for non-radiological legacy release issues under Resource Conservation Recovery Act (RCRA).

- Pantex received approval for the completion of its RCRA Facility Investigations from the TCEQ and EPA in August 2005. Process documents are in place that implement controls to obtain regulatory approval of soil disturbances, during construction activities, that have the potential to interfere or disturb a Solid Waste Management Unit (SWMU) defined by the Compliance Plan (CP) No. 50284 as part of the Pantex Plant RCRA Permit Hazard Waste-50284. Refer to Figure 3-3, *Pantex Solid Waste Management Units*, and Attachment H, *Summary of Pantex Future Environmental Liabilities*.

- A baseline risk assessment is required to determine if the risks resulting from CERCLA-related spills or releases require remediation. Acceptance and approval of the baseline risk assessment is expected in FY 2007. In addition to a site investigation and a baseline risk assessment, other required RCRA/CERCLA elements include a CMS/FS, public participation, a Federal Facility Agreement, EPA's issuance of a Record of Decision (ROD) and cleanup implementation.

- National Environmental Policy Act (NEPA) requirements are being addressed in conjunction with the CMS/FS processes, allowing for an evaluation of, and public input on, the impacts of proposed remedial actions before they are selected. The Environmental Assessment of Corrective Measures for Perched Groundwater will be submitted to the public in FY 2007.

- Long Term Environmental Stewardship (LTES) activities will be maintained as required, based on regulatory clean-up levels achieved. Generally, once the regulatory agency has approved a Corrective Measure Implementation Report, the corrective action identified will be implemented and operated until no longer required to protect human health and the environment in accordance with regulatory permits. Media that is remediated to industrial land use standards will require continued LTES via institutional controls.

1.2.4 Workload Assumptions

- The ten-year weapons workload was derived from the Draft Production and Planning Directive (P&PD), issue 2007-0. The P&PD reflects the stockpile developed to implement the Nuclear Posture Review (NPR) findings that have

been included in the approved Nuclear Weapons Stockpile Memorandum/Requirements and Planning Document. The Draft P&PD 2007-0 provides the long-term plans to support the new NPR stockpile. Future treaties and/or strategic defense reassessments, or NWC realignment that could have impacts on the Pantex Plant are not included in this TYSP and would require re-evaluation. If the U.S. adopts future strategic arms reduction agreements, significant production resources could be required. For example, if large quantities of weapons are scheduled for elimination from the stockpile, additional personnel and equipment will be required to dismantle the weapons. In addition, as the stockpile is reduced in size, it is anticipated that the scope of the evaluation program will increase; i.e., an evaluation scope increase for each weapon surveyed and an increase in the number of weapons surveyed. Analysis of any future change in stockpile levels as stated in the Draft P&PD 2007-0 will be required. NNSA is currently evaluating its options to consolidate the NWC. Any decisions as the result of this analysis are not included.

- Production workload and facility forecasts are determined through modeling processes and are based on existing activity process times. The model includes schedule contingency for some weapon activities that are anticipated, but not yet defined by the design agencies.

- Production workload and facility forecasts are based on all weapon systems utilizing one unit per production area (bay or cell) during operations. Efforts are ongoing to achieve multiple unit processing; however, it is not planned in Draft P&PD 2007-0. Analysis was performed to determine the impact of simultaneously processing multiple units per production facility and showed that for both single unit and multiple unit processing, the need for additional production capacity scheduled to be provided by the Line Item projects for upgrading Building 12-44 will still be required. The benefits that multiple unit processing provides are the increased confidence (or reduction in risk) that the Life Extension Program (LEP) workload can be accomplished in the facilities available and the additional capacity to accommodate the increasing workloads projected beyond FY 2013. It does not eliminate the requirement to have additional production cell capacities available in FY 2007. (Refer to Section 4.1.9)

- Lightning downtime is tracked on a monthly basis and reviewed at the end of the fiscal year to determine adjustments to lightning downtime factors in the model. These factors have been incorporated in the production workload and facility forecasts.

- Limited Life Component support for the inactive weapon stockpile is not included in the resource requirements.

- A backlog of legacy weapons and inert weapon components generated from past weapon dismantlement operations exists on-site that was generated from past weapon dismantlement operations. Component disposition activities

scheduled from FY 2005 through FY 2014 consist of this backlog in addition to components generated from active weapon dismantlement and evaluation programs.

- Component disposition of DOE-owned components that are in the custody of the DoD or other DOE facilities are not included in the ten-year workload.

- The Reliable Replacement Warhead (RRW) is a weapon replacement for legacy systems that is easier to assemble, disassemble and maintain. RRW concepts include increased safety and surety features over current stockpile systems and is assumed to provide reduced Documented Safety Analysis controls and increase throughput.

- The RRW-1 First Production Unit (FPU) is scheduled for FY 2012. The production rate for War Reserve (WR) assembly is anticipated to be limited by new pit production from the Los Alamos National Laboratory TA-55 facility. New Material testing is assumed to begin in parallel with WR production as well as Joint Test Assembly production. Stockpile surveillance activities are assumed to begin in FY 2014. Assembly inspection and surveillance diagnostic requirements have yet to be developed by the design agencies, but could significantly increase the process flow time and resource requirements.

- All explosives and explosive components residing at Pantex as a result of the explosive manufacturing process or weapon assembly/disassembly process will be sanitized to meet current requirements prior to release.

- Security conditions change in response to the world political situation. Whether a change will occur cannot be predicted, nor can the length of time at a heightened state of awareness be predicted. Heightened security levels may cause delays in operations and construction. These delays have not been factored into workload or ongoing project schedules.

- The workload at Pantex continues to rise based on production throughput plans. Refer to sections 3.1.10 Workload, 4.1.9 Production Personnel, and 4.1.9 Workforce Profile.

1.2.5 Technology Development, Deployment, & Obsolescence Assumptions

- The Nuclear Weapons Complex (NWC) is undergoing a period of transformation as evidenced by the Complex 2030 vision. The NNSA has identified four strategies that will support the vision and transform NWC into a flexible, agile, and responsive enterprise: (1) transformation of the nuclear stockpile through development of Reliable Replacement Warheads (RRW), refurbishment of limited numbers of legacy designs, and accelerated dismantlement of the Cold-War stockpile; (2) transformation to a modernized, cost-effective NWC; (3) creation of a fully-integrated and interdependent NWC;

and (4) driving the science and technology base essential for long-term national security.

- The assumption is that enabling technologies will be in place to support the Complex 2030 vision. Information technology is a transparent enabler of productivity; delivering on-demand the information and computing resources required to achieve the Plant's mission. Electronic communication must proceed quickly and seamlessly through an NWC-wide architecture. Enterprise Systems have to be in place to respond rapidly to supply chain difficulties and other material availability issues.

- Capabilities that must be developed and deployed include:

  - An infrastructure that will enable employees to communicate efficiently and participate in a collaborative work environment for both classified and unclassified information. This includes state-of-the-art network and telecommunication infrastructures, enterprise systems, computer hardware, and device-enabled point-to-point encryption.
  - Concurrent digital design tools for flexible, agile, responsive, and economical production and operations.
  - Agile, multi-use facilities.
  - Advanced diagnostic techniques, self-diagnosing weapons, NDE technologies (including radiography) and test facilities for aging experiments.

- Additionally, several infrastructure systems have been identified as approaching technical obsolescence and will require replacement. Examples of these systems include: ultraviolet flame detection, radiation detection and alarm, natural gas, electrical distribution, steam and condensate return systems. As these systems are replaced, new technologies will be implemented.

- Facilities like the HE Formulation and HE Component Fabrication and Qualification support the HE Center of Excellence. The Administration Support facility consolidates facilities, processes, and functions in support of efficient and effective plant operations. Several other facilities are still being refined and will be further defined through the Site Wide Environmental Impact Statement process.

1.2.6 Security and Safeguards Assumptions

- Pantex will continue to set the standard for the Complex in providing the optimal balance of personnel and technologies necessary to provide a highly effective security posture. As the only Category IA facility in the complex, Pantex has begun implementation of the FY 2005 DBT and expects to achieve full implementation by the date included in the approved plan. Pantex has

received funding for three of the four infrastructure projects identified in the approved implementation plan and the projects are underway. Pantex anticipates receiving funding for the remaining FY 2005 DBT-related infrastructure project in FY 2008. Additionally, Pantex will continue implementation of the new security orders, some of which require additional infrastructure.

1.2.7 Footprint Reduction and Excess Facility Assumptions

- Facility utilization for mission support is high at Pantex. Older facilities are currently being planned for demolition after new energy efficient replacements are built.

- Equalizing the reduction of excess facilities associated with new construction will be balanced, if needed, by disposal of excess square footage at other NNSA sites as approved by NNSA. Requirements for offsetting additional square footage at another site will be presented to NNSA. It is assumed NNSA will act as broker based on priority of new square footage to meet the NNSA mission. Facilities that were designed and/or approved prior to FY 2003 are considered grandfathered and square footage is not included in the balance of square footage.

1.2.8 Future Conditions Assumptions

- The operating space at Pantex is projected to expand in the future. Older facilities are being replaced with newer facilities, lowering the DM and improving the energy efficiency of the Plant. Additionally, the Component Evaluation Facility and the proposed security projects will require NNSA to allocate "banked" square footage eliminated from other sites to support mission driven growth and modernization at Pantex.

- Future facility utilization is based upon authorization and completion of planned projects as shown in Attachment A. If projects are not funded as planned, changes in the future use of some facilities will not occur as planned, and plant square footage reduction will be less than depicted in this TYSP.

1.2.9 General Assumptions

- All data provided in this document is based on information accumulated as of September 30, 2006 unless noted otherwise.

- Facility and personnel resource requirements for any new federal, state, and local laws and regulations or their interpretations that may be enforced subsequent to October 2006 are not included in resource projections in this TYSP.

- Resources to support International Atomic Energy Agency (IAEA) inspections or future treaty obligations are not included.

- Existing technologies are used as the baseline in evaluating resource projections for this TYSP; however, new technologies will continue to be evaluated for future applicability at the site.

- Waste treatment, disposal, and off-site shipments will continue as currently managed in accordance with applicable laws and regulations.

- RPV for facilities as calculated by the Facilities Information Management System (FIMS) using *RS Means* estimating methods, includes costs for the building envelope and facility systems (heating, ventilation, and air conditioning (HVAC), electrical service, telephone), but excludes furnishings, equipment, and site preparation. Medium and large buildings include fire alarm and suppression, but small buildings do not. Therefore, the RPV for plant facilities will always be less than the cost of actually constructing that facility and making it ready to use. RPV is useful to develop relative costs for facilities, but understates the actual value of the asset. Pantex RPV is based on FY 2007 FIMS model costs and site-specific adjustment factors and includes leased facilities. The FY 2007 RPV is $3.3 billion

- DM is calculated by the Condition Assessment Information System (CAIS) using *RS Means* cost estimating methods with site factors applied for security, general, and administrative overheads.

- Information provided in this TYSP pertaining to project scopes, schedules, and costs is subject to change as criteria and assumptions evolve. Baseline scopes, schedules, and costs in the plan are revised on an annual basis and should not be used to assess and track project completion. Project Execution Plans are developed and used for that purpose.

1.3 Current Situation

Approximately 55 percent of the Plant's square footage is more than 25 years old. Eighteen percent of the facilities were constructed during World War II; this is a 2% reduction from FY 2006. The Pantex Plant has undergone several periods of expansion and facility and infrastructure upgrades since it was originally built.

Future weapons workload requires more cell operations that use task exhaust than in prior years. Consequently, the cells in Building 12-44 require upgrades to meet production demands. The FY 2002 Line Item, Building 12-44 Production Cells Upgrade, has completed construction on three cells and is in the start-up process. The remaining two cells are being evaluated for possible construction in FY 2009. Refer to Section 4.1.9, Production Readiness/Plant Capacity.

Modernization of the Weapons Evaluation Test Laboratory (WETL) operated by Sandia National Laboratories (SNL) was accomplished through the construction of a new facility (Building 11-59) at Pantex. Funding and scope of work for the project

was included in the SNL budget; therefore, project costs are not included in the Pantex TYSP. The facility start-up completed in FY 2006.

Alternatives are being evaluated to expand Zone 4 pit staging capacity to accommodate required levels of pits to be generated in support of weapons workload requirements. This would be accomplished primarily by two projects. The first project would modify four rooms in Building 12-116. The second project would modify the remaining six Richmond magazines to Modified Richmond magazine capabilities. Several Richmond modification scenarios are under consideration; the evaluation is expected to yield the best and most cost effective solution. If the completion of the project to modify the remaining six Richmond Magazines is delayed beyond 2013, storage capacity issues are expected to directly impact the ability to conduct scheduled weapons work.

Pantex experienced a 40 percent decline over a seven-year period (FY 1994 through FY 2000) in the amount of funding directed to infrastructure issues. During the same time period, the total Plant footprint increased three percent and compliance requirements significantly increased. The gap between required and actual maintenance funding resulted in a "bow wave" of deteriorating facility and infrastructure conditions. Although FIRP has worked to eradicate the DM backlog, a sizable backlog still remains. The existing backlog as of the end of FY 2006 will not be reduced substantially over this ten-year planning period through available funding sources; i.e., FIRP, RTBF Operations of Facilities and Line Item Construction. BWXT Pantex has completed initial three-year surveillance effort to re-establish the Condition Assessment Survey (CAS) program at Pantex. All buildings have been inspected for civil, structural, electrical, and mechanical deficiencies.

- Modeling the DM backlog into the future, based on FYNSP targets, indicates a gap between required and actual maintenance of approximately $21.8 million per year. This gap is comprised of Replacement-In-Kind (RIK) of aging systems, and minor modifications and betterments of the physical plant (e.g., fire protection lead-in piping. Even with the effective use of FIRP, maintenance management practices that are continually being improved, and dedication to reducing the DM backlog, it is projected that the DM backlog will continue to rise.

- In addition to performing classical preventive and corrective maintenance, the maintenance program accomplishes surveillance and testing to comply with nuclear facility technical safety requirements, explosive safety requirements, and industrial safety requirements. Consequently, the allocation of maintenance resources is not totally discretionary. Approximately 10 percent of the maintenance budget sustains surveillance and testing requirements, regulatory training, and AB implementation requirements in mission facilities.

1.4 Changes from Prior Year TYSP

Major changes from the FY 2007 TYSP include the following:

- Sections of the previous TYSP are located in new sections of this TYSP or have been eliminated.

- Pantex has identified two Line Item projects that support vacating WWII facilities and support the HE Center of Excellence. These include the HE Formulation Facility and HE Component Fabrication and Qualification Facility.

- In developing concepts for Complex 2030, Pantex is identifying several projects that support this initiative. The Administrative Support Facility (possible third party financing) supports the 2030 initiative by consolidating facilities, processes, and functions in support of efficient and effective plant operations. Other projects will be proposed as Complex 2030 is further defined through the Site Wide Environmental Impact Statement process.

- During FY 2006, facilities were recategorized from Mission Essential to Mission Critical (MC). The NNSA provided guidance, review, and approval of the facilities included in the MC category. In FY 2007, Non-Mission Essential facilities and those facilities not categorized as MC from the previous Mission Essential category will be recategorized to Mission Dependent-Not Critical (MDNC), and Not Mission Dependent (NMD). The final list of MDNC and NMD facilities has not been reviewed by NNSA but it is expected to be finalized in FY 2007. This clarification and consistency will provide NNSA with the basis for equitable comparison of facilities and their contribution to the NNSA NWC mission.

- Attachment A-1 reflects the Line Item projects as shown in the ICPP dated November 7, 2006 unless otherwise noted.

- Attachment A-6d has been changed to A-6b to help NNSA identify improvements to the assets required to support the safeguards and security posture.

- Attachment E-4, Pantex Plant Footprint Summary, projects the Plant will be approximately 75,000 square feet short of banked footage based on the current approved projects in the Integrated Construction Project Plan to offset future construction. Currently, the projection indicates the Component Evaluation Facility (CEF) project will require a waiver to offset square footage. The future footprint needs for unfunded Production and Security Infrastructure, in Attachment A, as well as other Proposed LI projects and unfunded GPP projects, are not included in the table at this time.

- Attachment G was added to identify the approved list of Mission Critical Facilities at Pantex. This list reflects the approved list by Thomas P.

D'Agostino in memorandum "Fiscal Year (FY) 2007 Mission Critical List, Revision 0" dated August 7, 2006.

- Attachment H was added to provide the summary table of Pantex future environmental liabilities and the closure criteria.
- The EM Program is scheduled to transfer to NA-50, Infrastructure and Environment, in FY 2009.
- Table 4-9 provides data on Long Term Stewardship (LTS) and future environmental liabilities that are not included in any other budget requests.

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2.1.2 Plant Population

Approximately 4,000 people are employed at the Pantex Plant. The exact number varies weekly based on terminations and new hires. This population consists of BWXT Pantex employees as well as PXSO, OST, Sandia National Laboratory's Weapons Evaluation Testing Laboratory (WETL); and the Tri Lab Project Office. Numerous other organizations also have a presence at Pantex including the Defense Nuclear Facility Safety Board (DNFSB), the State of Texas Division of Emergency Management, and several subcontractors. In addition, construction personnel temporarily work at Pantex. Table 2-1 provides the organizations and their approximate number of employees at the site.

Table 2-1, Plant Population

ORGANIZATION	NUMBER OF EMPLOYEES
PXSO	84
BWXT PANTEX	3,316
OST	127
SNL	18
TRI LAB	14
OTHER (EXCLUDES CONSTRUCTION PERSONNEL)	428
TOTAL	**3,987**

2.1.3 Land Acquisition Discussion

The Department of Energy is currently under contract with the U.S. Army Corps of Engineers (USACE) to negotiate the acquisition of real property adjacent to the DOE/NNSA Pantex site for environmental restoration monitoring and potential future remediation of contaminated perched groundwater. This property is east of the Plant. Options for beneficial use of the property are planned and discussed in Section 4.1.2.3. Refer to Figure 4-10 for the perched groundwater extent to the east and acquisition area.

The goal of the land acquisition project is to acquire property that could be used for irrigation with treated perched groundwater, monitoring of perched and Ogallala groundwater, and possible in-situ treatment of perched groundwater. These alternatives are described and analyzed in the Environmental Assessment of Corrective Measures for Perched Groundwater, which was submitted to the public in FY 2007. Once environmental work is completed, DOE will disposition the property.

3.0 MISSION NEEDS/PROGRAM DESCRIPTIONS

This section provides a detailed description of workload and expected changes including potential new missions and requirements over the ten-year planning period. The linkage of future workload to mission critical facilities and infrastructure is discussed in detail in Section 3.2.

3.1 Current mission, programs, and workload

The mission of BWXT Pantex is to support nuclear weapons Stockpile Stewardship while continuously improving levels of safety and productivity. Major activities include:

- Evaluating, retrofitting, and repairing weapons in support of both life extension programs and certification of weapon safety and reliability
- Dismantling weapons surplus to the stockpile
- Sanitizing components from dismantled weapons
- Developing, testing, and fabricating chemical and explosive components
- Providing interim storage and surveillance of plutonium components.

Weapons program responsibilities and support activities are integrated into DSW, Campaigns, RTBF, S&S, and Non-NNSA activities. These program elements define the scope of the work to accomplish the workload assigned to Pantex. Figure 3-1 depicts the programs and their sub-elements.

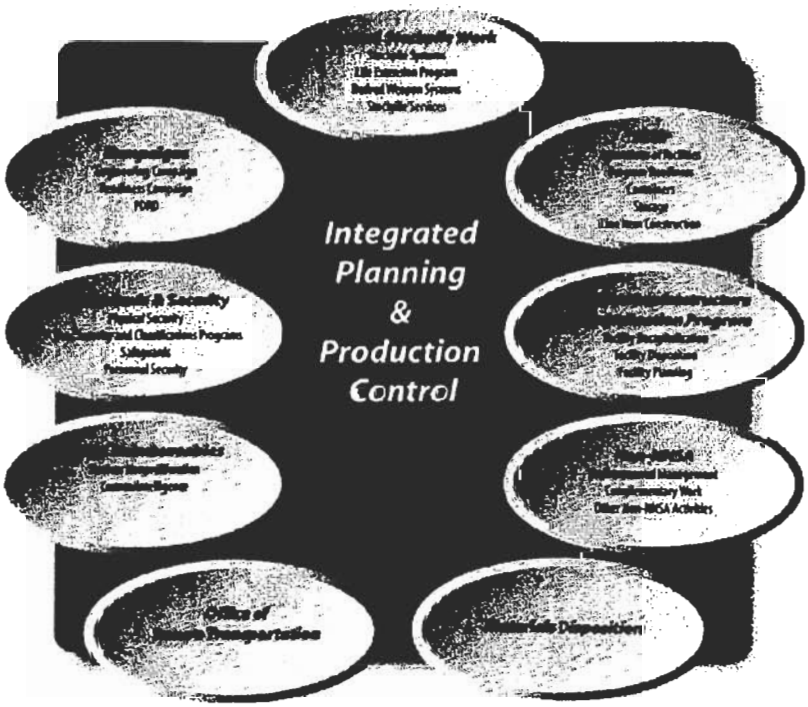

Figure 3-1, Pantex Programs

All BWXT Pantex activities ultimately support the core mission of nuclear weapons Stockpile Stewardship. To accomplish this effectively, programmatic activities and funding mechanisms must be properly aligned and coordinated as depicted in Figure 3-2. These activities begin with BWXT Pantex personnel interacting with the design agencies to obtain the necessary design and surveillance requirements while simultaneously ensuring that manufacturing constraints are understood. Long lead-time technologies and processes are then typically introduced into Pantex under the Campaigns Program. These involve multi-site design and implementation teams conducting projects with specific goals of finite length. Once the technologies and/or processes are ready for deployment, they are transitioned to the DSW Program that oversees all direct production activities. Serving as a foundation for all programmatic activities, the RTBF Program ensures the right facilities and infrastructure are in place to support the nuclear weapons stockpile and to maintain the site and facilities in a safe, secure, reliable, and compliant condition. With appropriate strategic alignment between all of the programmatic elements, design requirements are folded into all production and readiness activities. This alignment ensures a seamless transition between programmatic elements and timely implementation of new processes and technologies.

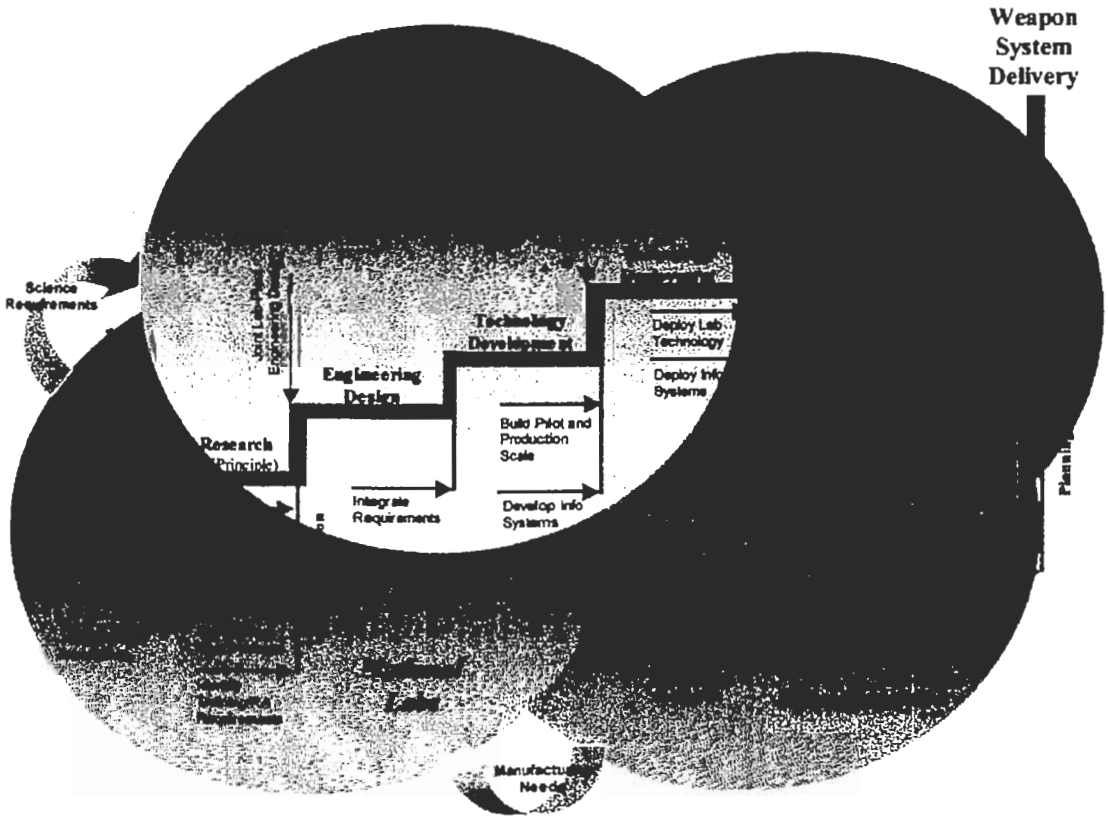

Figure 3-2, Programmatic Alignment

BWXT Pantex is committed to the principles of Integrated Safety Management (ISM), including the elements of the Voluntary Protection Program (VPP) that engage all people at the site in improving safety performance. Those elements include management leadership, employee involvement, worksite hazard analysis, hazard prevention and control, safety and health training, and process feedback. These elements are key to Security, the RTBF program, the DSW program, and the Campaigns program.

3.1.1 Directed Stockpile Work (DSW)

DSW includes production and evaluation functions required to maintain and certify the current nuclear weapons stockpile and refurbishment efforts supporting life extension initiatives. DSW also supports dismantlement and component disposition of retired weapons systems. DSW encompasses program planning, production preparation, production startup, ongoing production execution, and surveillance elements. DSW is managed in the following subprograms:

- Stockpile Systems
- LEP
- Retired Weapon Systems
- Stockpile Services/Production Support

3.1.1.1 Stockpile Systems

Stockpile Systems Program activities support programmatic flight testing, laboratory testing, and component/subassembly surveillance. Activities are directed through the Production and Planning Directive (P&PD), Program Control Documents (PCDs), Technical Business Practices (TBPs), and the Development and Production (D&P) Manual. The work performed at Pantex includes:

- Disassembly and inspection of weapon evaluation cycle units.
- Assembly of Joint Test Assemblies (JTAs).
- JTA post mortem analysis.
- Assembly and disassembly of test bed units.
- Rebuild of evaluation cycle units.
- Component surveillance/evaluation and preparation of the Quality Evaluation Report (QER).
- Delivery of Quality Evaluation Test (QET) components to other NNSA sites.
- Limited Life Component Exchange (LLCE).
- Programmatic alterations (usually defined as Alts or Mods).
- Weapon repairs.
- Significant Finding Investigations (SFI).

- Non-destructive evaluation.
- Weapon and component radiography.
- Weapon atmosphere analysis.
- Laser gas sampling and analysis.
- High Explosives (HE) testing.
- Explosive component evaluation.
- Non-nuclear component evaluation.
- Pit evaluation.
- Component prescreening.
- Electrical and mechanical tests.

Recognizing that the nuclear weapons stockpile is aging beyond its original design life, the NNSA is undertaking new surveillance initiatives. This is increasing the Pantex workload, which includes augmented sampling, increased testing, and deployment of new capabilities to meet new testing requirements. More diagnostic evaluation tests are being conducted on components than previously performed. As the Enhanced Surveillance initiative establishes new technologies and a more predictive evaluation capability, new testing techniques are being incorporated.

3.1.1.2 Life Extension Program (LEP)

The LEP objective is to extend the life of a weapon system beyond its original certification. Pantex supports life extension of weapons systems in two ways: performing LEPs and supporting the Life Extension Options (LEO) Group. LEP tasks assigned to Pantex include weapon disassembly, inspection, component requalification, component fabrication, component testing, component replacement, weapon assembly, and weapon testing. BWXT Pantex supports the planning and scheduling of future LEP workload through participation in the LEO Group.

The B61-7 Alt 357 first production unit (FPU) was achieved in June 2006 and the B61-11 Alt 357 PFU was achieved in January 2007, increasing the reliability of the weapon system. The W76-1 FPU is scheduled for September 2007 and will increase the reliability and surety of this weapon system. In order to meet the FPU for the W76, several Campaigns projects are needed for component reacceptance including eddy current for pit tubes, ultrasonic inspection of physics packages, and SNMCRF for pit package reacceptance. The LEPs require facility modification to increase cell capacity. The 12-44 Production Cells Upgrade project increases cell capacity. The SNMCRF is required for pit reacceptance capability. Other projects include the modifications in the Computed Tomography (CT) bay allowing nuclear operations and the HE Pressing facility providing risk mitigation for the current aging press equipment and facility.

3.1.1.3 Retired Weapon Systems

Retired weapons are dismantled to meet revised national security requirements. During dismantlement, a retired weapon is disassembled into subassemblies and components. Components are dispositioned (stored, sanitized, etc.) per NNSA guidance unless they are requested by the design agencies for further evaluation. Plutonium pits are staged on-site on an interim basis. Uranium and tritium components are shipped off-site.

3.1.1.4 Stockpile Services

Stockpile Services focuses on activities that support multiple weapon programs. These activities include support for weapon production, evaluation, and development work. However, these activities are not directly identified with or allocated to a specific weapon program. Typical activities include:

- Production control, planning and integration.
- Transportation and movement for weapon systems and components.
- Manufacturing, Engineering, Quality, and Applied Technology Division management and administration.
- Weapon configuration management support.
- Receipt and inspection of weapon-related materials and equipment.
- Environment, safety and health support including nuclear explosive safety.
- Multi-program test equipment support.
- Multi-program evaluation and analysis.
- Metrology operations.
- Waste operations.
- Independent reviews for weapon operations.

3.1.1.5 Reliable Replacement Warhead

RRW will continue Phase 2 Feasibility Study activities in FY 2007. BWXT Pantex is supporting the feasibility study by providing NNSA with cost and manufacturability assessments of the New Mexico and California designs.

RRW will begin Phase 2A Design Definition and Cost Study activities in FY 2007 and continue into Phase 3 Development and Engineering in FY 2008. BWXT Pantex will be supporting these phases by working with the selected design team, developing process concepts and providing members to support Product Realization Teams.

3.1.1.6 DSW Ten-Year Objectives

DSW ten-year objectives focus on engineering participation to support the LEPs; current stockpile disassembly, surveillance, and assembly PCD requirements; and incorporation of new technologies to support core surveillance. Specific objectives are provided in the anticipated period of accomplishment.

FY 2008 - FY 2012:

- Completion of yearly weapon program LLCE, repair, dismantlement, and evaluation requirements.
- Concurrent engineering and FPU delivery supporting the W76 LEP.
- Reduction of canned subassembly (CSA) surveillance radiography backlog.
- Completion of the Seamless Safety – for the 21st Century (SS-21) implementation for all enduring stockpile and dismantlement programs.
- Establishment of pit refurbishment capabilities in support of life extension requirements.

FY 2013 - FY 2017:

- Completion of yearly weapon program LLCE, repair, and evaluation requirements.
- Completion of yearly program production schedules supporting the W76 life extension requirements.
- Continue concurrent engineering support of anticipated LEP workload.
- Support of weapon program dismantlement initiatives.

3.1.2 Campaigns

Pantex has unique Stockpile Stewardship responsibilities for U. S. nuclear weapons. Modern technologies and capabilities are essential for stockpile surveillance, weapon refurbishment, and dismantlement requirements. The Engineering Campaign, the Readiness Campaign, and the Plant Directed Research, Development, and Demonstration (PDRD) program are focused on ensuring that Pantex has the capability and capacity to meet weapon requirements associated with defined workloads.

3.1.2.1 Engineering Campaign

The Engineering Campaign provides the Nuclear Weapons Complex with modern tools and capabilities in engineering sciences and technologies to ensure the safety, security, reliability, and performance of the current and future US nuclear weapon stockpile, as well as a sustained basis for stockpile certification. The Campaign is the driver for the discovery, innovation, maturation, and application of the advanced engineering required for the nuclear weapons stockpile, and it supports the NNSA Strategic Goal to *Maintain and enhance the safety, security, and reliability of nation's nuclear weapons stockpile to counter the threat of the 21st century.*

understand the chemical and physical mechanisms causing time-dependent changes in materials properties and use that understanding to develop predictive models of materials performance. The chemical and physical mechanisms that cause materials properties to change with time will provide the basis for quantifying future behavior of components. No new facilities are required to support the Material Lifetime Studies.

3.1.2.2 READINESS CAMPAIGN

The Readiness Campaign supports the DOE Strategic Plan General Goal - *Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile.*

The Readiness Campaign is an essential component of the Stockpile Stewardship Program with the responsibility for developing or reestablishing new manufacturing processes and technologies for qualifying weapon components for reuse. The mission of the Readiness Campaign Program is to identify, develop, and provide new or improved processes and technologies to meet current nuclear weapon design and production needs and to provide quick response to future national security mission requirements of the Nuclear Weapon Complex. The day-to-day maintenance of the nuclear weapons stockpile and the Life Extension Programs (LEPs) require the capability to manufacture, inspect, and requalify nuclear weapon components, and to assemble and disassemble nuclear weapons. Some of the processes and technologies required for this future work are obsolete creating an urgent need for modernization.

The Readiness Campaign is composed of five programs that are multi-year, multi-functional focused efforts involving all Nuclear Weapons Complex sites. The focus includes strategies to meet near-term, mid-term, and long-term needs, ranging from developing new solutions for current technology issues to developing a responsive infrastructure for future needs. The breadth of the technology development and deployment span a very wide range of needs and include both nuclear and non-nuclear products and processes supporting DSW customers.

Pantex is involved in the Advanced Design and Production Technologies (ADAPT) and High Explosives and Weapons Operations (HEWO) sub-programs. Requirements flow from Directed Stockpile Work (DSW). ADAPT provides the applied technology necessary to advance a conceptual product or process to the prototype stage. After the prototype stage is complete, ADAPT passes the technology to the HEWO, which further advances it until production capability is demonstrated. This capability may or may not be sufficient to provide the production capacity required by DSW delivery schedules. Additional capacity is funded by either DSW or Readiness in Technical Base and Facilities (RTBF).

Advanced Design and Production Technologies (ADAPT)

The ADAPT sub-program supplies a vital link in supporting NNSA's mission to assure a safe, reliable, and secure nuclear weapons stockpile. ADAPT supports development of manufacturing processes and products that replace sunset technologies and new alternatives processes that provide enhanced safe, reliable and secure functionality.

Most of the successful development efforts are transitioned to one of the Readiness programs for deployment into directed stockpile production or a weapons system block upgrades. Other ADAPT development goals are to support the planning and design of scheduled new operations facilities for the NWC with new or modified manufacturing processes and technologies. ADAPT also has the responsibility to conceptualize and support development of the optimum framework and key components of a united electronic network and information base for the NWC.

High Explosives and Weapon Operations (HEWO)

The HEWO sub-program was established at Pantex to assure that the Nuclear Weapons Complex was fully ready to support mission and workload requirements associated with production of high explosive components and the assembly and disassembly of war reserve nuclear weapons. The Life Extension Programs (LEPs), which are a part of this work scope, require the requalification and reuse of weapon piece parts, components, and sub-assemblies. This campaign also addresses the necessary activities to ensure that the capability, capacity, infrastructure, workforce, and facilities are available at the Pantex Plant to achieve the assigned mission.

This campaign includes missions exclusive to Pantex, such as the production of high explosives and weapons assembly/disassembly and also addresses new missions to Pantex such as requalification and recertification of weapon components. Pantex uses the latest planning guidance and reviews to determine production readiness and identify gaps that exist relative to meeting future and current requirements. Applicable prototype production technologies demonstrated by the ADAPT and Enhanced Surveillance sub-programs are further developed by HEWO and delivered to either RTBF or DSW for deployment.

3.1.2.3 Plant Directed Research, Development, and Demonstration (PDRD) Program

The PDRD Program is focused on relevant manufacturing technologies to enhance and maintain the vitality of the nuclear weapons production plants. The Pantex PDRD program is guided by the NNSA Strategic Plan, NNSA Applied Technology Roadmap, and Pantex Applied Technology Roadmap. BWXT Pantex management uses these plans and roadmaps to develop strategic direction that identify and prioritize the site's most important long-lead strategic technology needs. The technology needs forecasts developed for the Pantex mission areas provide guidance for identifying focus areas that are of strategic importance to the Pantex Plant. The following focus areas are strategically important to Pantex:

- Safety
- Science-based manufacturing
- HE manufacturing
- Non-destructive evaluation
- Product requalification

PDRD projects are typically high-risk, but have potential high gains if successful. And, while they are not linked directly to DSW schedules, the technologies developed could have impacts on production schedules and facility requirements. Technologies developed by PDRD, normally require further development before being deployed into production. The further development can be accomplished by the Engineering or Readiness campaigns as well as through strategic partnerships with universities and private industry. Only after the technologies are further developed are they considered in facility and process planning.

3.1.2.4 Campaigns Ten-Year Objectives

The Campaigns and the PDRD Program will result in the development of new technologies for weapon production and surveillance. Specific objectives are provided in the anticipated period of accomplishment.

FY 2008 - FY 2012:

- Establish process capability for models-based design/fabrication of special weapon tooling and high explosive main charge.
- Provide System Engineering-based solutions to improve tooling management process.
- Implement Insensitive HE performance diagnostics.
- Implement digital radiography, Computed Tomography, dimensional characterization, and ultrasonic imaging for pit characterization.
- Implement new and expanded capabilities for thermal performance, sensitivity, and mechanical properties testing of explosive materials and components.
- Establish capability to deliver specialty booster and detonator explosives.
- Establish capability to provide TATB and TATB-based explosives.
- Implement improvements to the explosive component fabrication process to reduce costs and increase component reliability.
- Implement automated business systems.
- Establish capability to non-destructively characterize the quality of primary assembly potting material in-situ.
- Establish the enterprise approach to safe, efficient, high-quality weapon operations related to SS-21 process start-ups.
- Establish advanced inventory and materials management systems.

FY 2013 - FY 2017:

- Augment capability and capacity to sustain explosive fabrication to maintain readiness.
- Implement processes for new explosive formulations.
- Establish HE manufacturing capability and capacity.

Table 3-2, RTBF and Other Line Item Objectives

RTBF Objectives	B61 LEP	W76 LEP	W80 LEP	RRW	Stockpile Systems	Retired Systems	SNM Storage	Plant Readiness
		P						
		P						S*
		P		S	S			S
	S	S	S	S	S	S	S	S
		P/S	S	P	S			S*
			S	S	S		S	S
			S	S	S		S	S
		S			S			S*
				S	S			S
				S	S			S
		S		P	P			
		S	S	P	S			S*
								S
								S
								S
(b)(2)High					S			S
					S			S
					S			S
					S			S
					S			S
					S			S
								S
					S		P	
								S
								S
								S
								S
		S	S	S	S			
		S	S	S	S	S	P	

P = Primary Driver S = Support Driver S* = Projected need for Dismantlement or Future LEPs

3.1.5 Materials Disposition (MD)

MD provides for the safe, secure, and environmentally sound storage of all fissile materials and the ultimate disposition of non-weapons grade unusable fissile materials declared surplus to national security needs. The MD Program includes support of special pit shipments, storage of pits in Zone 4, pit thermal monitoring in Zone 4, and pit storage sampling surveillance.

3.1.5.1 MD Ten-Year Objectives

MD objectives are focused on maintaining the infrastructure and capability required for Zone 4 West storage and inter-zone transportation of excess pits. It includes all the activities associated with facility management of nuclear facilities and transportation including pit surveillance, thermal monitoring, corrective and preventive maintenance coordination, AB documentation formulation, review and implementation, and order compliance. Activities also include personnel training and qualification required to store pits, the capability to move pits between zones, and the effort required to reconfigure magazines to start and maintain pit storage. Specific objectives are provided in the anticipated period of accomplishment:

FY 2008 - FY 2012:

- Provide support and coordination activities, as needed, by design agency development of a new off-site shipping (Type B) container.
- Perform pit-repackaging activities for off-site shipment to the design agencies to support current programs.
- Advanced Recovery and Integrated Extraction System (ARIES) demonstrations (up to five Campaigns), as directed per DOE authorization letters.
- Maintain the infrastructure and capability required for Zone 4 West storage and inter-zone transportation of excess pits.
- Monitor the thermal environments of pits in Zone 4 magazines and trailers and thermally characterize additional magazines for pits stored in the sealed insert (SI) containers. The project includes retrieval and reporting of thermal data, instrumentation of storage areas containing pits, and monitoring and characterization of storage facilities.
- Inspect storage samples, selected by the design agencies, to ensure they meet safety and reliability requirements as specified in design agency requirements.
- Conduct the multi-year funded construction activities authorized to upgrade the Modified Richmond magazines.

FY 2013 - FY 2017:

- Continue storage capability, thermal environmental monitoring, and surveillance activities as defined above.

Table 3-3, Ten-Year Weapons Work
(In Number of Units Unless Otherwise Indicated)

Work Category	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Weapons Assembly/ Disassembly [1]	1000	1005	809	787	813	791	991	1167	1188	1113
SNM Operations										
- SNM Containers and Packaging[2]	1158	1228	1030	1010	1030	1010	1100	1380	1400	1350
- SNM Surveillance and Monitoring[3]	132	152	152	152	152	152	152	152	152	152
HE Operations										
- HE Fabrication (sets)	300	350	350	400	400	400	400	400	400	400
- HE Testing	2,800	2,900	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Component Disposition										
- Inert (parts)	77,000	72,300	72,300	72,300	65,500	42,200	42,200	42,200	42,200	42,200
- Explosives (lbs.)	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
- Energetic (parts)	2,700	7,400	7,400	7,400	2,000	1,300	1,300	1,300	1,300	1,300

[1] Includes dismantlement, evaluation, maintenance, and repair units.
[2] Includes Pits, CSAs, Reservoirs, and RTGs.
[3] Includes container and component surveillances.

3.2 Mission Critical Facilities and Infrastructure/Linkages

During FY 2006, all facilities and infrastructure at Pantex were reviewed based on criteria provided by NNSA, facilities and infrastructure and were categorized as Mission Critical (MC), Mission Dependent Not Critical (MDNC), or Not Mission Dependent (NMD). PXSO and NNSA HQ reviewed the proposed list of Mission Critical facilities. On August 7, 2006, the Deputy Administrator for Defense Programs approved the consolidated set of Mission Critical facilities and placed the list under change control. The facilities categorized as Mission Critical are provided in Attachment G. The NNSA definition, derived from the Federal Real Property Council (FRPC) Mission Critical definition, is shown here:

> FRPC NNSA Mission Critical - Those facilities and infrastructure that are necessary to perform the primary NNSA missions assigned to the Site. This would encompass any facility or infrastructure where the majority of the structure or utility, or its predominant use (>60%), is to support scientific research, production, or testing to conduct the Stockpile Stewardship Program and without which, operations would be disrupted or placed at risk for a time period that would jeopardize major deliverables (Level 1 milestones).

Additional RTBF Criteria for Mission Critical facilities and infrastructure was provided. RTBF requires a direct link to a program sponsor such as Directed Stockpile Work (DSW) or Campaigns. A direct link includes the following: performing activities to meet a Level 1 or Level 2 DSW/Campaign milestone (ex. producing an item for a stockpile system, storing programmatic material, performing R&D activities for a stockpile system), specifically identified as a key facility within a DSW or Campaign Implementation Plan, and/or directly linked to external commitments made on behalf of NNSA to DOE or other federal agencies. It is expected that all security category I facilities are in this category.

During FY 2007, all remaining facilities and infrastructure at Pantex will be reviewed based on criteria provided on January 16, 2007 by NNSA and categorized as Mission Dependent, Not Critical (MDNC) or Not Mission Dependent (NMD) and submitted to NNSA for approval.

The primary mission of Pantex is performed in facilities categorized as Mission Critical. However, there are several MDNC facilities and infrastructure that are essential support for Mission Critical facilities. Examples of facilities and infrastructure essential to the mission include the steam plant, electrical distribution, generators, fire protection, and weapon and component staging and storage facilities. These facilities are maintained to ensure that the mission is performed in the facilities with the best condition, the highest level of service, and the most scrutiny within the facilities management program.

Mission Critical and facilities essential to the mission receive preferential treatment when prioritizing project and equipment requests. Since the mission critical facilities house the primary mission operations, it is necessary to keep these facilities and essential supporting infrastructure operable and reliable.

All sources of funding are considered to fund project and equipment requests. In addition to RTBF and FIRP funding, Pantex has received supplemental funding from Congressional appropriations that have been used to reduce DM, update equipment, and provide capacity or capability upgrades. The ESPC project will also reduce DM by replacing equipment and systems. BWXT Pantex will continue to focus planning and funding allocation on projects and equipment replacement that will reduce DM and maintain all facilities, but especially facilities essential to the mission, in a safe, secure, compliant, and reliable condition.

The list of Mission Critical facilities is shown in Attachment G.

3.3 Future NNSA Mission, Programs and Workload, and Impacts

BWXT Pantex is developing and managing program elements and processes associated with the pursuit, acquisition, conduct, and completion of all new mission work for the Plant. All relevant planning documents are used to develop and support strategies for future mission work and to analyze impacts to the ongoing mission from potential alternative use of the site's facilities.

Pantex will perform all WR assembly, surveillance, dismantlement, and High Explosive production for RRW. The RRW will meet the same military requirements as current legacy warheads however it will be able to ensure greater long-term confidence in safety and reliability while decreasing the likelihood that underground nuclear testing would ever be needed. Information provided is based on the planning guidance provided by NNSA during the feasibility study. Facility and infrastructure needs are based on this guidance and current inspection and diagnostic requirements for similar weapon systems.

The RRW WR FPU is scheduled for FY 2012. Activities are scheduled to occur from FY 2008 thru FY 2024. These activities include: SS-21 process development (procedures, tooling, testers, training, and facility preparation), WR assembly, new material disassembly/testing/assembly, Joint Test Assembly (JTA) production, and High Explosive production (formulation, synthesis, pressing, and machining). RRW WR assembly activities will require four operations bays, Vacuum Chamber, PAL/CAP, Radiography, and Mass Properties facilities.

Surveillance activities are scheduled to occur from FY 2014 thru FY 2050, they include: WR Disassembly & Inspection (D&I), Testbed Assembly and Disassembly, and High Explosive testing. RRW surveillance activities will require one operation bay, PAL/CAP, Radiography, and Mass Properties facilities. Additional diagnostic capabilities may be required once specific surveillance requirements are developed by the design agencies.

Dismantlement activities are scheduled to occur from FY 2042 thru FY 2052, they include: WR disassembly and component disposition. RRW dismantlement activities will require three operations bays, PAL/CAP and Radiography.

3.3.1 Complex 2030

Alternative use of facilities, beyond the known missions to which they are committed, continues to be a long-range option for the Pantex Plant. Depending upon mission assignment, weapons workload, and current reconfiguration plans, alternate facility use in support of emerging NNSA missions and/or in support of any need the NNSA may have in response to world events will be considered by BWXT Pantex and PXSO. Alternate use of facilities ensures that Pantex continues its strong role to support the needs of the NNSA and the nation while supplementing the DSW and enhancing its ability to attract and retain employees having critical skills.

Potential new missions at the Pantex Plant include the following:

- High Explosives Center of Excellence
- Center of Excellence for Weapons Training
- Consolidated Nuclear Production Center
- Consolidated Plutonium Center
- SNM Consolidation

Pantex has adequate land area available to meet the infrastructure requirements for these potential new missions. Table 3-4 provides information on possible locations and projected personnel resources needed for these potential new missions.

Table 3-4, Pantex 2030 Initiatives

Assignment	Probability to Retain/Attain	Possible Location	Potential FTP[1]	Expected Year of Implementation
High Explosive Center of Excellence	High	(b)(2)High	20	2015
Center of Excellence for Weapons Training	High		3	2011
Consolidated Nuclear Production Center	Medium		2,000	2030
Consolidated Plutonium Center	Medium		1,355	2022
SNM Consolidation	Medium		998	2022

[1] Projections include direct and support FTP

3.3.1.1 HE Center of Excellence

The 2030 vision for the nuclear weapon complex mandates that the complex be reconfigured such that the overall footprint is reduced as well as consolidating functions that will reduce the overall operating cost of the complex. In keeping with this important vision and initiative, Pantex has positioned itself to lead the nation in the manufacturing, research, development, testing and the evaluation of high explosives.

Pantex not only has the capability to support the future nuclear weapon stockpile but the infrastructure to meet the various capacity demands that are currently being considered for the complex. The major operational facilities have been upgraded while other upgrades/replacement facilities have been authorized and funded. These future projects will provide improved consolidation of explosive operations and efficiencies. Figure 3-6 is provided to show the Pantex vision of the proposed HE Center of Excellence. By 2030, Pantex will have significantly reduced our footprint while increasing capability and capacity.

Our experience of manufacturing HE coupled with our established relationship with the Labs makes Pantex the logical choice for being the nuclear weapon complex's HE Center of Excellence. In addition, we have carved out a substantial commercial market by being the sole source (only one in the world) provider for high explosives such as Hexanintrostibene (HNS). This high explosive is used extensively by NASA, the Oil Industry, and other commercial entities.

Pantex has laid the foundation to support the Complex's 2030 vision by aligning the three critical elements i.e. experienced people, right sized infrastructure, and established working relationships with both the National labs as well as the commercial sector to make the 2030 vision a reality and Pantex the HE Center of Excellence.

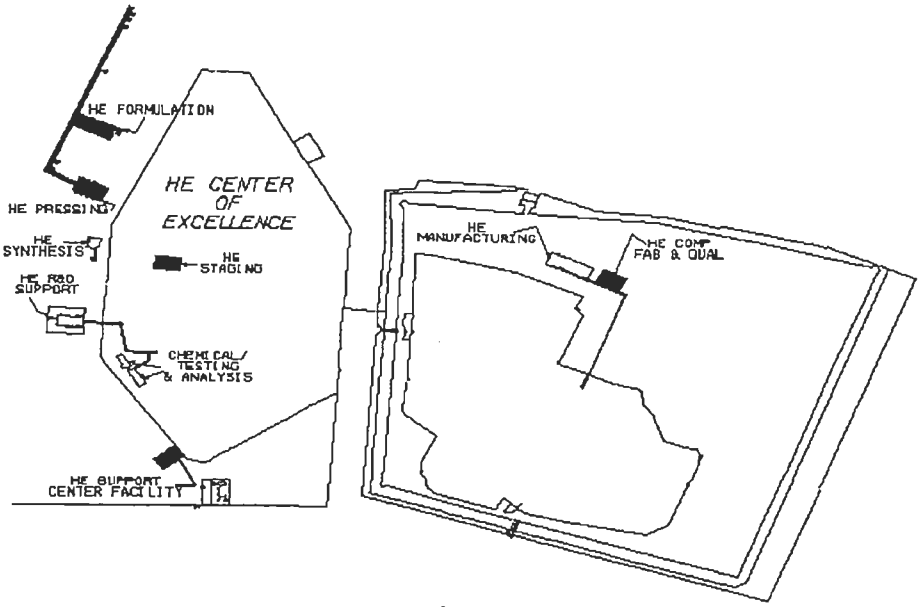

Figure 3-6 Proposed HE Center of Excellence

3.3.1.2 Center of Excellence for Weapons Training

The Pantex Plant is the only location that offers hands-on nuclear weapons training using actual tooling and processes required for weapons operations. Other locations have cutaways and select components, but none have all the elements available in one location. Based on this fact, Pantex is working to become a center of excellence for weapons training. This distinction provides the opportunity to train engineers and scientists throughout the NWC.

Many benefits can be realized through this initiative. First and foremost is the insight that can be provided to the design agency engineers. Many engineers have not had the opportunity to see, touch and manipulate weapon components and learn how the components integrate into the entire system. Training at Pantex in the manufacturing environment gives an engineer a firsthand view of many of the obstacles at a production facility. Interaction between site and design agency engineers fosters good working relationships needed to resolve issues related to extending the life of the current nuclear weapon systems. In addition, engineers and scientists in the intelligence community and other areas also have a need to learn about nuclear weapon systems. This effort supports the mission work of the facility and the cross-training efforts of the weapon training personnel. The NWC will benefit from the creation of a Center of Excellence for Weapons Training.

The Center of Excellence for Weapons Training would be housed in the weapons training organization and does not conflict with any ongoing activities.